

3/14/2018

Print



Dart Hawkesbury  
1270 Aberdeen St Hawkesbury, ON K6A 1K7 Canada  
Tel (613) 632-5200

## Purchasing Receipts

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit	Ag Dz
PO039214	TWM001-VU	1	1	Net 30	M304P0.675W.091	304/316 Pipe .675 OD x .091 Wall Thickness : MATERIAL: TP304/TP316 STAINLESS STEEL SEAMLESS PIPE AS PER ASTM A312/ASME SA312 receive ft				60	3/12/2018	69		S051210	Stock	3/14/2018	\$ 3.49 / ft	
		2			M304TR0.750W.049	304 Round Tube .750 X .049W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft						40		S051211	Stock	3/14/2018	\$ 3.33 / ft	
		3			M304TR0.750W.120	304 Ss Round Tube .750 X .120W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft				12		20		S051212	Stock	3/14/2018	\$ 3.95 / ft	
		4			M6061T6T0.625W.049	6061-T6 Round Tube .625 X .049W : MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ-A-225/8 OR AMS 4080 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft						12		S051213	Stock	3/14/2018	\$ 3.50 / ft	
		5			M6061T6T0.500W.058	6061-T6 Round Tube .500 X .058W : MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ-A-225/8 OR AMS 4080 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft				40		48		S051214	Stock	3/14/2018	\$ 1.75 / ft	
		6			M6061T6TS1.000W.120	6061T6 Sq Tube 1.00 X 1.00 X .120W : MATERIAL: 6061-T6 OR 6061-T651/T6510/T6511/T62 SQUARE TUBING AS PER AMS-QQ-A-225/8 OR AMS 4117/4128/4115/4116 OR PER AMS-QQ-A-200/8 OR AMS 4160 NOTE: FLAT EDGE REQUIRED				120		126		S051215	Stock	3/14/2018	\$ 2.00 / ft	
		7			M6061T6TS1.000W.125	6061T6 Sq Tube 1.00 X 1.00 X .125W : MATERIAL: 6061-T6 OR 6061-T651/T6510/T6511/T62 SQUARE TUBING AS PER AMS-QQ-A-225/8 OR AMS 4117/4128/4115/4116 OR PER AMS-QQ-A-200/8 OR AMS 4160 NOTE: MATERIAL NEED TO BE WITH FLAT EDGE NOT ROUNDED				100		105		S051216	Stock	3/14/2018	\$ 2.00 / ft	
Total:										404		420						

Plex 3/14/2018 9:18 AM Dart.Dubois.Pascal



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

# **PURCHASE ORDER** **PO039214**

**Supplier:** TWM001-VU  
TW Metals  
PO Box 933014  
Atlanta, GA 31193-3014 USA  
Phone: 585 768 5600  
Fax: 585 768 5601

**Ship To:** 1270 Aberdeen Street  
Hawkesbury  
ON  
K6A 1K7 Canada  
Phone: 613-632-5200

**PO No:** PO039214

**PO Date:** 3/6/18

**Due Date:** 3/12/18

**Purchase Order**

**Revision:**

**Revision Date:**

**Ship-To Contact:** Lavoie, Chantal  
clavoie@dartaero.com

**Via:** Ground

**Pymt Terms:** Net 30

**Freight Terms:**

**Special Comments:**

**E-MAILED**

**MAR 08 2018**

## **Items**

Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
1	M304P0.675W.091		304/316 Pipe .675 OD x .091 Wall Thickness : MATERIAL: TP304/TP316 STAINLESS STEEL SEAMLESS PIPE AS PER ASTM A312/ASME SA312 receive ft	Firmed	3/12/18	60 ft	0 ft	60 ft	\$3.49/ft	\$209.40
2	M304TR0.750W.049		304 Round Tube .750 X .049W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft	Firmed	3/12/18	60 ft	0 ft	60 ft	\$3.333/ft	\$199.98
3	M304TR0.750W.120		304 Ss Round Tube .750 X .120W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft	Firmed	3/12/18	12 ft	0 ft	12 ft	\$3.95/ft	\$47.40

DAS  
11  
9-80

9-00

DAS  
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Items										
Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
4	M6061T6T0.625W.049		6061-T6 Round Tube .625 X.049W : MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ-A-225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft	Firmed	3/12/18	12 ft	0 ft	12 ft	\$3.50/ft	\$42.00
							12'			
									MAR 14 2018	
5	M6061T6T0.500W.058		6061-T6 Round Tube .500 X.058W : MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ-A-225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft	Firmed	3/12/18	40 ft	0 ft	40 ft	\$1.75/ft	\$70.00
							48'			
									MAR 14 2018	
6	M6061T6TS1.000W.120		6061T6 Sq Tube 1.00 X 1.00 X .120W : MATERIAL: 6061-T6 OR 6061-T651/T6510/T6511/T62 SQUARE TUBING AS PER AMS-QQ-A-225/8 OR AMS 4117/4128/4115/4116 OR PER AMS-QQ-A-200/8 OR AMS 4160 NOTE: FLAT EDGE REQUIRED	Firmed	3/12/18	120 ft	0 ft	120 ft	\$2.00/ft	\$240.00
							126'			
									MAR 14 2018	
7	M6061T6TS1.000W.125		6061T6 Sq Tube 1.00 X 1.00 X .125W : MATERIAL: 6061-T6 OR 6061-T651/T6510/T6511/T62 SQUARE TUBING AS PER AMS-QQ-A-225/8 OR AMS 4117/4128/4115/4116 OR PER AMS-QQ-A-200/8 OR AMS 4160 NOTE: MATERIAL NEED TO BE WITH FLAT EDGE NOT ROUNDED	Firmed	3/12/18	100 ft	0 ft	100 ft	\$2.00/ft	\$200.00
							105'			
									MAR 14 2018	
Grand Total:									\$1,002.30	

## Order Notes


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## Order Notes

## Procurement Quality Clauses

A005 right of entry  
A012 chemical and physical test report  
A016 personnel qualification  
A017 raw material identification (as applicable)  
A026 certification of material conformance  
A041 quality management system  
A042 dart notification by supplier  
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit [www.dartaerospace.com](http://www.dartaerospace.com) for further explanation.

Plex 3/6/18 10:09 AM dart.lavoie.chantal





O'Neal High-Performance Metals Group



**Packing  
Slip**

ORDER NO.: 80917468

FROM: CHIC

PAGE 1

CUST NUMBER: 1203820 NET WGT: 196.030 REQ.DATE: 03/12/18 CONFIRMED  
SOLD TO: SHIP TO:  
DART AEROSPACE LTD DART AEROSPACE LTD  
1270 ABERDEEN ST 1270 ABERDEEN ST  
HAWKESBURY ON HAWKESBURY ON  
CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 03/07/18  
TERMS: NET 30 DAYS VIA: COMMON CARRIER  
F.O.B.: SHIPPING POINT FREIGHT: PREPAID  
CUST ORD NO.: PO039214 RELEASE NO.:  
RECEIVING PHONE:

LINE	ITEM DESCRIPTION	WIDTH	LENGTH
0001	38420 SMLS 304/L A-312 3/8 SCH 40		17/24 FT

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	60.000 FT	69.833 FT	69.833 FT	40.004	3

\*\* 1 TEST REPORTS REQUIRED \*\*

\*\* 1 CERTS REQUIRED \*\*

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00  
PO:49372626 HT:11M168 PC: 3 CUSTOMER QTY: UOM  
MLT:CHINA MFG:CHINA SLB/CL:LTUA72

0002 36860 SMLS CD 304/L A269 3/4 OD X .049 WA 20' CL

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	40.000 FT	40.000 FT	40.000 FT	14.669	2

\*\* 1 TEST REPORTS REQUIRED \*\*

\*\* 1 CERTS REQUIRED \*\*

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00  
PO:49370276 HT:N170711AS10 PC: 2 CUSTOMER QTY: UOM  
MLT:CHINA MFG:CHINA SLB/CL:-

0003 36925 SMLS CD 304/L A269 3/4 X .120 WA 20' CL

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	20.000 FT	20.000 FT	20.000 FT	16.147	1

\*\* 1 TEST REPORTS REQUIRED \*\*

\*\* 1 CERTS REQUIRED \*\*

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00  
PO:49378892 HT:YX1709608 PC: 1 CUSTOMER QTY: UOM  
MLT:CHINA MFG:CHINA SLB/CL:US-2395

**THANK YOU FOR THIS ORDER**

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE  
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL  
REVIEW.  
<http://www.twmetals.com/invoice-terms.html>



O'Neal High-Performance Metals Group



Packing Slip

ORDER NO.: 80917468

FROM: CHIC

PAGE 2

CUST NUMBER: 1203820 NET WGT: 196.030 REQ.DATE: 03/12/18 CONFIRMED  
SOLD TO: SHIP TO:  
DART AEROSPACE LTD DART AEROSPACE LTD  
1270 ABERDEEN ST 1270 ABERDEEN ST  
HAWKESBURY ON HAWKESBURY ON  
CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 03/07/18  
TERMS: NET 30 DAYS VIA: COMMON CARRIER  
F.O.B.: SHIPPING POINT FREIGHT: PREPAID  
CUST ORD NO.: PO039214 RELEASE NO.:  
RECEIVING PHONE:

LINE ITEM DESCRIPTION WIDTH LENGTH  
0004 42506 D6061-T6 5/8 OD X .049 WA 12 FT ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	12.000 FT	12.000 FT	12.000 FT	1.247	1

\*\* 1 TEST REPORTS REQUIRED \*\*

\*\* 1 CERTS REQUIRED \*\*

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00  
PO:49375233 HT:F002504910001 PC: 1 CUSTOMER QTY: UOM  
MLT:UNITED STATES MFG:UNITED STATES SLB/CL:224071

0005 42276 D6061-T6 1/2 OD X .058 WA 12 FT ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	48.000 FT	48.000 FT	48.000 FT	4.545	4

\*\* 1 TEST REPORTS REQUIRED \*\*

\*\* 1 CERTS REQUIRED \*\*

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00  
PO:49380023 HT:F002573770002 PC: 4 CUSTOMER QTY: UOM  
MLT:UNITED STATES MFG:UNITED STATES SLB/CL:224733

0006 45963 E6061-T6 SQ-SC TUBE 1 SQ X .125 WA 21'-1" FT

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	120.000 FT	126.500 FT	126.500 FT	65.137	6

\*\* 1 TEST REPORTS REQUIRED \*\*

\*\* 1 CERTS REQUIRED \*\*

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00  
PO:49374541 HT:22894511 PC: 6 CUSTOMER QTY: UOM  
MLT: MFG:UNITED STATES SLB/CL:1101258614

THANK YOU FOR THIS ORDER

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PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL  
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O'Neal High-Performance Metals Group



# Packing Slip

ORDER NO.: 80917468

FROM: CHIC

PAGE 3

CUST NUMBER: 1203820 NET WGT: 196.030 REQ.DATE: 03/12/18 CONFIRMED  
SOLD TO: SHIP TO:  
DART AEROSPACE LTD DART AEROSPACE LTD  
1270 ABERDEEN ST 1270 ABERDEEN ST  
HAWKESBURY ON HAWKESBURY ON  
CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 03/07/18  
TERMS: NET 30 DAYS VIA: COMMON CARRIER  
F.O.B.: SHIPPING POINT FREIGHT: PREPAID  
CUST ORD NO.: PO039214 RELEASE NO.:  
RECEIVING PHONE:

LINE	ITEM	DESCRIPTION	WIDTH	LENGTH
0007	45963	E6061-T6 SQ-SC TUBE 1 SQ X .125 WA		21'-1" FT

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	100.000 FT	105.417 FT	105.417 FT	54.281	5

\*\* 1 TEST REPORTS REQUIRED \*\*

\*\* 1 CERTS REQUIRED \*\*

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00  
PO:49374541 HT:22894511 PC: 5 CUSTOMER QTY: UOM  
MLT: MFG:UNITED STATES SLB/CL:1101258614

BROKERS KUEHNE AND NAGEL LTD

AREA	TYPE OF PKG	PKGS	GRS WEIGHT	WIDTH	LENGTH	HGHT
351	REDDICRATE	1.000	287.000	7.0000	288.0000	7

1.000 287.000

BY: KB  
RT 000-

UNLOAD TYPE: NONE SPECIFIED

DATE SHIPPED \_\_\_\_\_

DATE FILLED \_\_\_\_\_

THANK YOU FOR THIS ORDER

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O'Neal High-Performance Metals Group



**Packing  
Slip**

ORDER NO.: 80917468

FROM: CHIC

PAGE 4

CUST NUMBER: 1203820	NET WGT: 196.030	REQ.DATE: 03/12/18	CONFIRMED
SOLD TO:	SHIP TO:		
DART AEROSPACE LTD	DART AEROSPACE LTD		
1270 ABERDEEN ST	1270 ABERDEEN ST		
HAWKESBURY ON	HAWKESBURY ON		
CANADA	CN K6A 1K7	ONTARIO CANADA	CN K6A 1K7

SALESPERSON: DONNA SMALLEY	SHIP BY: 03/07/18
TERMS: NET 30 DAYS	235 TUBEWAY
F.O.B.: SHIPPING POINT	CAROL STREAM IL 60188
CUST ORD NO.: PO039214	
VIA: COMMON CARRIER	
FREIGHT: PREPAID	
RELEASE NO.:	
RECEIVING PHONE:	

"TW Metals MSDS data is available on our web site at [www.twmetals.com](http://www.twmetals.com). MSDS data can be found under the Technical Resources Tab, Product Statistics & Data and the TW Metals MSDS's heading. If you do not have web site access you may telephone 610-458-1300 and we will mail or fax a copy of our current MSDS data to your location."

# "CERTIFICATE OF CONFORMANCE"

"TW Metals certifies that the material supplied on this purchase order and contained in the heat/lot number referenced above has been manufactured, inspected, and tested in accordance with the material specification. These records are on file at TW Metals. Packaging material for shipments to Europe and China consists of manufactured wood products and complies with the European emergency measures for coniferous non-manufactured wood packing material"

Authorized Test Report Clerk *Kathy Bachnick* Date: 3/07/18

These commodities have been exported from the United States in accordance with the U.S. export control laws, export administrations regulations. Diversion contrary to U.S. law prohibited.

**THANK YOU FOR THIS ORDER**

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL REVIEW.  
<http://www.twmetals.com/invoice-terms.html>

WLPSPRW023068



MILL INSPECTION CERTIFICATE

EN 10204 3.1

CHANGSHU WALSHIN SPECIALTY STEEL CO.,LTD.

CUSTOMER: TA CHEN STAINLESS PIPE CO.,LTD.		HEAT NO.: 11M168																												
DATE: 20170306		SPECIFICATION: ASTM A312/SA312-14/ASME SA312-15/SA312-15																												
COMMODITY: STAINLESS STEEL SEAMLESS PIPE		CERTIFICATE NO.: 2017030623068162																												
DELIVERY CONDITION: COLD FINISHED SOLUTION ANNEALED AND PICKLED		GRADE: TP304/316L																												
CHEMICAL COMPOSITION (WT %)																														
ELEMENTS	C	SI	MN	P	S	NI	CR	MO	N	CU	TI	NB	NO+TA	CO	V	B	AL	SO	PH	AS	SN	FE	BI	ZR	AL+TI	PREN	Ferrite content			
SPECIFICATION	min	0.000	0.000	0.000	0.000	8.000	18.000																							
	max	0.035	0.750	2.000	0.045	0.0300	11.000	20.000																						
RESULTS		0.024	0.300	0.950	0.032	0.0000	8.100	18.240	0.060	0.290																				
SIZE	PACKAGE NO.	PRECES	WEIGHT		TS		YS		EL(0mm)		HARDNESS		FLATTENING		FLARING		I.C. CORROSION		PITTING		GRAIN SIZE		Ld No.		HYDROSTATIC TEST		EDDY CURRENT TEST		ULTRASONIC TEST	
OD(1/4"WT(304)1.6(mm))						MPa	0.2% MPa	1% MPa		%		HRB		TEST		TEST		TEST		(mg/dm <sup>2</sup> day)					MPa		TEST		TEST	
1405-8096-7315	TA126-18	31	709.71	525	666.671	327.315	/	51.61	6280.5	GOOD	/	GOOD	/	/	/	/	/	/	/	/	/	/	201702-TG-A03	/	/	GOOD	/	/	/	
38-105-8096-7315	TA126-26	48	1118.11	291	622.595	312.290	/	54.564.5	8017.5	GOOD	/	GOOD	/	/	/	/	/	/	/	/	/	/	201702-TG-067	/	/	GOOD	/	/	/	
14-305-8096-7315	TA126-27	85	1946.32	492	602.611	244.244	/	66.566.5	7417.4	GOOD	/	GOOD	/	/	/	/	/	/	/	/	/	/	201702-TG-807	/	/	GOOD	/	/	/	
1405-8096-7315	TA126-9	59	1348.16	1003	686.671	327.315	/	51.61	8280.5	GOOD	/	GOOD	/	/	/	/	/	/	/	/	/	/	201702-TG-A03	/	/	GOOD	/	/	/	
TOTAL		223	5123.52	2311																										

Remarks:  
NACE MR0175-2003  
AS PER PROFORMA INVOICE NO.16363.S  
I.C. TEST PER ASTM A562-02a E ML P24691/3 ML P1144D  
NO REPAIR BY WELDING  
MATERIAL FREE FROM MERCURY CONTAMINATION  
COUNTRY OF ORIGIN: CHINA, COUNTRY OF MANUFACTURE: CHINA  
ET STANDARD PRACTICE: ASTM E426  
REFERENCE DISCONTINUITY: DRILLED HOLE  
WATER QUENCHED ANNEALING TEMPERATURE:1000℃  
FREE OF RADIATION

1. WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN BEEN MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH THE RESULTS OF THE CONTRACT AND CONFORM TO THE SPECIFICATION ABOVE.  
2. MATERIAL FREE FROM MERCURY CONTAMINATION AND RADIOACTIVE CONTAMINATION.  
3. NO REPAIR BY WELDING.  
4. THE CERTIFICATE SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE WRITTEN APPROVAL OF THE COMPANY.

ACCEPTED BY  
T.M. METALS  
1 JUN 16 17  
REPORT  
QUALITY MANAGER

ADDRESS: 2# HAIKANG ROAD, HAIYU TOWN, CHANGSHU CITY, JIANGSU PROVINCE, CHINA 215519 TEL: +86-512-52586280 FAX: +86-512-52586827  
B-2-CS-QM-10000-00E-0201

# Mitsubishi

JIAXING MT STAINLESS STEEL CO., LTD

MILL TEST CERTIFICATE

EN10204 3.1 CERTIFICATE

ISO 9001: 2008 TUV SUD CERT REGISTRATION No.: 01 100 095954

PED/97/23/CE EURO CERT CERTIFICATE NO: CN.CE.111051-02/14



Precisely Right.

CERTIFICATE NO.: 17MTC-102310

SALES CONTRACT NO.: M 49370276

COMMODITY: STAINLESS STEEL SEAMLESS PIPE

SPECIFICATION: ASTM A213-15c ASTM A269-15a, ASME SA213-15 AVG WALL

PURCHASER: KASUGAI CO., LTD.

ORDER M 49370276

DATE OF REPORT: 2017-10-17

Steel Grade	Heat No.	Dimensions			Quantity		Process	Delivery Condition	Macroscopic Inspection	
		O.D. (INCH)	W.T. (INCH)	Length (FT)	FT	Piece		Annealed & Pickled & 320 Grit/min	End Cut	Appearance
TP304/304L	N170711AS10	3/4	0.049	20	5500	275	Cold-Drawn		Passed	Passed

### Chemical Composition (W.T. %)

Element	C	Si	Mn	P	S	Cr	Ni	Mo	Ti				
Requirements	≤0.035	≤1.00	≤2.00	≤0.045	≤0.030	18.0-20.0	8.0-12.0	-	-	-	-	-	-
Ladle Analysis	0.017	0.34	1.32	0.027	0.001	18.13	8.01	-	-	-	-	-	-

### Mechanical Properties

Test Item	Y.S. (MPa) R <sub>0.2</sub>	T.S. (MPa) R <sub>m</sub>	EL. (%) I <sub>n2in</sub>	Reduction of Area Z (%)	Hardness HRB	Cold Bend Test	Flaring Test	Flattening Test	P.M.L. TEST
Requirements	≥170	≥485	≥35	-	≤80	-	-	e=0.09	-
Test Results	260	625	55	-	76	Passed	Passed	Passed	Passed

### Non Destructive Tests

Remarks:

- ASTM A213-15c ASTM A269-15a, ASME SA213-15 AVG WALL
- PIPES TESTED PER ASTM A1016
- SOLUTION HEAT TREATMENT 1050°C X 1 5m/min
- NO WELD REPAIR WAS PERFORMED
- PMI TESTING DONE ON EACH PIPE - SATISFACTORY
- IN COMPLIANCE WITH NACE MR0175/ISO 15156-2015
- FREE FROM MERCURY CONTAMINATION
- MATERIAL IS FREE FROM RADIOACTIVITY
- VISUAL CHECK IS SATISFACTORY
- COUNTRY OF ORIGIN: CHINA
- COUNTRY OF MELT: CHINA



Test Item	Eddy Current Test
Requirements	ASTM E 426
Test Results	Passed

1. WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN TESTED AND THE TEST RESULTS ARE IN COMPLIANCE WITH THE TERMS OF THE PURCHASE ORDER OR CONTRACT

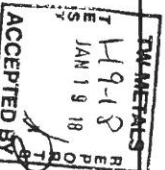
2. THE CERTIFICATE SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF THE COMPANY.

Prepared by:

*[Signature]*

Approved by:

*[Signature]*





# TUSCO TUBE

MILL TEST CERTIFICATE  
ISO9001:2008 / EN10204 3.1

CUSTOMER: TW METAL

P.O.: US-2395

TW ORDER NO. M49378892

GRADE: ASTM A213/A213M-17; ASME SA213/SA213M-17 AVG WALL

ASTM A269/A269M-15A TP304/304L

COMMODITY: STAINLESS STEEL SEAMLESS TUBE

CONDITION: COLD FINISH / SOLUTION TREATED/PICKLED/PLAIN END/OD POLISHED 240 GRIT.

CERTIFICATE NO.: TC2017122606

HEAT NO.: YX1709-608

## CHEMICAL COMPOSITION (%)

ELEMENTS	C	SI	Mn	P	S	NI	Cr	Mo	TI	Cu	N	Co
SPEC	MIN					8	18					
	MAX	0.035	1	0.045	0.03	12	20					
RESULTS		0.026	0.4	0.64	0.034	0.002	8.05	18.16				

## PHYSICAL PROPERTIES

Dimensions			Quantity		Tensile Properties				Flattening	Flaring	Grain Size	Hydrostatic	I.C.T A262E	EDDY	
OD	W.T	LENGTH			FT	KG	Y.S 0.2%	T.S						EL	Hardness
(INCH)	(INCH)	(FT)				MPa	MPa	≥35(%)	HRB						
0.75	0.120	20	2760	1022.58	300	600	57	71	OK	OK	/		OK		OK
1	0.035	20	1100	182.05	290	610	55	72	OK	OK	/		OK		OK
1.25	0.065	20	2080	784.16	300	600	55	71	OK	OK	/		OK		OK

## REMARKS:

IN COMPLIANCE TO NACE MR0175-2015/MR0103  
SOLUTION HEAT TREATMENT :1050°C X 1.5m/min

NO WELD REPAIR WAS PERFORMED

FREE FROM MERCURY CONTAMINATION

FREE FROM RADIATION CONTAMINATION

IC TESTING ACCORDANCE TO ASTM A262 E-SATISFACTORY

MELT AND MANUFACTURE COUNTRY: CHINA

ROHS COMPLIANT

PMI TESTING DONE.

MATERIAL TEST CERTIFICATES TO EN 10204/3.1

MATERIAL COMPLIANT WITH ISO 9001:2008

THE FOLLOWING CLAUSES ARE NOT APPLICABLE:

~ FAR BAA(FAR 52.225-1 BUY AMERICAN ACT-SUPPLIES)

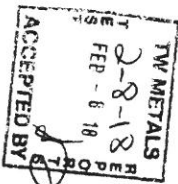
~ DFARS BAA(DFARS 252.225-7001 BUY AMERICAN ACT & BAL. OF PAYMENTS PROG

~ FAR TAA(FAR 52.225-5 TRADE AGREEMENTS)

ALL MATERIAL PROVIDED UNDER THIS PURCHASE ORDER IS FREE OF

CONFLICT MINERALS IN ACCORDANCE WITH THE DODD FRANK ACT SECTION 1502

ADD: SHUANGBANG VILLAGE, (YANG YUAN) XINZHUANG TOWN, CHANGSHU, SUZHOU CITY, JIANGSU PROVINCE, PEOPLE'S REPUBLIC OF CHINA



MANAGER OF QUALITY ASSURANCE DEPARTMENT



1. WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN TESTED AND THE TEST RESULTS ARE IN COMPLIANCE WITH THE TERMS OF THE PURCHASE ORDER OR CONTRACT OF TW METALS  
PO#M49378892

2. THE CERTIFICATE SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF TUSCO TUBE.

# KAISER ALUMINUM FABRICATED PRODUCTS

## CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

CUSTOMER PO NUMBER: M49375233-1		CUSTOMER PART NUMBER: 42506		PRODUCT DESCRIPTION: Drawn Seamless Tube/Pipe	
KAISER ORDER NUMBER: 224071	LINE ITEM: 001	SHIP DATE: 09/23/2017	KAISER LOT NUMBER: F00250491	ALLOY: 6061	TEMPER: T6
WEIGHT SHIPPED: 388.000 LB	QUANTITY: 311.000 PCS	B/L NUMBER: 226892	DIAM/DAF/THKNS: 	WIDTH: 	LENGTH: 12.000 FT
SHIP TO:  TW METALS INC 235 WEST TUBEWAY DRIVE CAROL STREAM, IL 60188 USA			SOLD TO:  TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA		

### Actual Physical Properties

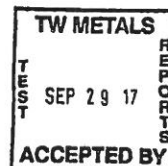
REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON%IACS	BEND
F00250491	0001	1	48.0	41.5	19.0	N/A	N/A	N/A
F00250491	0002	1	47.7	41.2	19.0	N/A	N/A	N/A

### Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D20419	.61	.27	.21	.04	.98	.09	.05	.03	.00	.00	.00	.01	.02

### Applicable Requirements:

Description: OD: 0.6250"; Wall: 0.0490"; Round @  
AMS4082P AMS-WW-T-700/6C ASTM B210-12 WW-T-700/6F  
WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS4082P, WAS NOT OILED.  
This Product Complies to FAR BAA, DFARS BAA, FAR TAA  
COMPLIES TO DIN EN 10204 JAN 2005  
No Weld Repair. Mercury Free.



### Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA  
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA  
(DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5  
TRADE AGREEMENTS).

Plant Serial: 00026219  
Kaiser Order Number: 224071  
Line Item: 001



**KAISER**  
**ALUMINUM**  
**FABRICATED PRODUCTS**

*Best in Class*

**CERTIFIED TEST REPORT**

<http://Online.KaiserAluminum.com>

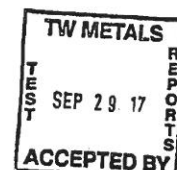
KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

**CERTIFICATION**

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager

*L. Kattentidt*



Plant Serial: 00026219  
Kaiser Order Number: 224071  
Line Item: 001

*AB*

# KAISER ALUMINUM FABRICATED PRODUCTS

*Best in Class*

**CERTIFIED TEST REPORT**  
http://Online.KaiserAluminum.com

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

CUSTOMER PO NUMBER: M49380023-1		CUSTOMER PART NUMBER: 42276		PRODUCT DESCRIPTION: Drawn Seamless Tube/Pipe	
KAISER ORDER NUMBER: 224733	LINE ITEM: 001	SHIP DATE: 12/18/2017	KAISER LOT NUMBER: F00257377	ALLOY: 6061	TEMPER: T6
WEIGHT SHIPPED: 535.000 LB	QUANTITY: 469.000 PCS	B/L NUMBER: 227858	DIAM/DAF/THKNS:	WIDTH:	LENGTH: 12.000 FT
SHIP TO:  TW METALS INC 235 WEST TUBEWAY DRIVE CAROL STREAM, IL 60188 USA			SOLD TO:  TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA		

## Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON%IACS	BEND
F00257377	0001	1	47.1	42.3	16.0	N/A	N/A	N/A
F00257377	0002	1	47.3	41.8	18.0	N/A	N/A	N/A

## Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D30857	.60	.29	.24	.04	.93	.08	.06	.02	.00	.00	.00	.01	.02

## Applicable Requirements:

Description: OD: 0.5000"; Wall: 0.0580"; Round @  
AMS4082P AMS-WW-T-700/6C ASTM B210-12 WW-T-700/6F  
WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS4082P, WAS NOT OILED.  
This Product Complies to FAR BAA, DFARS BAA, FAR TAA  
COMPLIES TO DIN EN 10204 JAN 2005  
No Weld Repair. Mercury Free.



## Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA  
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA  
(DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5  
TRADE AGREEMENTS).

Plant Serial: 00026922  
Kaiser Order Number: 224733  
Line Item: 001

**KAISER**  
**ALUMINUM**  
**FABRICATED PRODUCTS**

*Best in Class*

**CERTIFIED TEST REPORT**

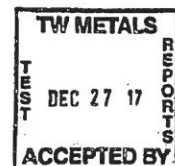
<http://Online.KaiserAluminum.com>

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
6573 W. WILLIS ROAD  
CHANDLER, AZ 85226

**CERTIFICATION**

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager



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Sapa Industrial Extrusions  
1550 KIRBY LANE  
SPANISH FORK, UT  
84660-1349

Sapa Extrusions Inc., a Subsidiary of Sapa AB

Invoice To Customer

TW METALS INC  
THE ARBORETUM SUITE 204  
760 CONSTITUTION DR

EXTON, PA - 19341

Ship To Customer

TW METALS INC  
235 WEST TUBEWAY

CAROL STREAM, IL - 60188

## Certified Inspection Report

Sales Order Number		Line No.	Customer P/O	Cert Number	Page
1101258614		1	M49374541-1	SAPA2703664	Page 1 of 3
Cert Creation Date		Cert Print Date		01-AUG-17	01-AUG-17

Quantity Shipped	LB	Date Shipped	Item Description	Specification
6005		01-AUG-17	Extruded Hollow Square Tube 1.000 SQ x 0.125 WALL 253.000 INTN FIN M-MILL W/F 515 E 14 CS 1.41 6061/T6	ASTMB221 REV 14 ASMESH221 REV 09 AMS-QQ-A-200/8 REV A
B/L		Item No.	303367059	
854900		Item No. Rev	6061/T6	
Delivery Id			Marking CONTINUOUS;	
4920386				
Customer/Part No.				
45963				

### Applicable Specifications, Revisions and Exceptions

Profiles supplied are "domestic end products" as defined in FAR 52.225-1 entitled "Buy American Act - Supplies" and DFARS 252.225-7001 entitled "Buy American Act and Balance of Payments Program", and are "U.S.-made end products" as defined in FAR 52.225-5 entitled "Trade Agreements." This profile is manufactured at one of Sapa's US facilities. Aluminum billet, which is the principal component used in the manufacturing process, is purchased from sources in the US and/or in qualifying countries as described in DFARS 225.872.1. DFARS clause 252.225-7014 entitled "Preference for Domestic Specialty Metals," does not relate to aluminum extrusions that would be produced by Sapa since 6061 or 6063 alloys do not fall within the definition of Specialty Metals.

Certificate in accordance with EN10204 3.1

TAAG: BLANKET PO# TW4912181

COMPOSITION NOTE: The values for 'Others Each' and 'Others Total' have met the limits as shown on this certified inspection report. Remainder is Aluminum.

Signature And Title

Steven Tanner

Quality Control Manager

01-AUG-17

### Legal Statement

We hereby certify that, unless otherwise indicated, the material covered by this report has been manufactured, inspected, and tested in accordance with, and has been found to meet, the applicable requirements described herein, including any specifications forming a part of the description and that samples representative of the material met the composition and mechanical properties shown on the face of this certification. Also, note that mercury is not a normal contaminant in aluminum alloys and neither it nor any of its compounds are used in the manufacture of our product. This certification is not to be reproduced in partial form without prior written approval of our Quality Assurance Dept.



ACCEPTED BY

AK



Sapa Industrial Extrusions  
1550 KIRBY LANE  
SPANISH FORK, UT  
84660-1349

## Certified Inspection Report

Sales Order Number 1101258614	Line No. 1	Customer P/O M49374541-1	Cert Number SAP A2703664	Page 2 of 3
			Cert Creation Date 01-AUG-17	Cert Print Date 01-AUG-17

Quantities per Lot / Packages

Package Number	Lot Number	Quantity	UOM	Weight	
				Gross	Net
G14-PKG1952050	22894511	106	PCS	1209	1201
G14-PKG1952051	22894511	106	PCS	1209	1201
G14-PKG1952058	22894511	106	PCS	1209	1201
G14-PKG1952161	22894511	106	PCS	1209	1201
G14-PKG1952164	22894511	106	PCS	1209	1201

### Composition Limits

Alloy	Si		Fe		Cu		Mn		Mg		Cr		Zn	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
6061	0.40	0.80	---	0.70	0.15	0.40	---	0.15	0.80	1.20	0.04	0.35	---	0.25
Ti														
			Others Each		Others Total									
6061	Min	Max	Min	Max	Min	Max								
	---	0.15	---	0.05	---	0.15								

### Composition Results

Heat / Cast	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others Each	Others Total
S17072604	0.73	0.32	0.24	0.06	0.89	0.06	0.06	0.02	---	---

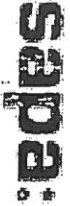
### Mechanical Property - Test Limits

Test Type	UTS - L		TYS - L		EL 4D-Long	
	UOM	KSI	UOM	KSI	PCT	
Test Temper.						
Lot Number		# of Tests				
22894511		4				
		MIN Value				
		44.3				
		MAX Value				
		46.3				
		MIN Value				
		39.0				
		MAX Value				
		42.0				
		MIN Value				
		10.5				
		MAX Value				
		13.0				

Cert Notes

TW METALS  
REPRODUCTION  
AUG 03 17  
ACCEPTED BY

115



Sapa Industrial Extrusions  
1350 KIRBY LANE  
SPANISH FORK, UT  
84660-1349

## Certified Inspection Report

Cert Number		Page	
SAPAZ703664		Page 3 of 3	
Cert Creation Date		Cert Print Date	
01-AUG-17		01-AUG-17	

Products manufactured with a T6511 temper also meet T6 temper requirements.

Yield strength has been determined by the 0.2% offset method

All mill finish alloys produced at Sapa Industrial Extrusions comply with Directive 2011/65/EU (RoHS 2) with the exception of 6262 alloy

In accordance with EN 10204 Inspection Certificate Type 3.1

Melted in the USA or Qualifying Countries (as defined in Defense Federal Acquisition Regulation Supplement (DFARS) Section 225.872-1)

Manufactured in the United States

Manufactured in the United States



AK

AK

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061T651.000W.125  
 DATE: MAR 14 2018

PO / BATCH NO.: 039214/5051216

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 105'  
 QUANTITY INSPECTED: 105'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: W.125  
 THICKNESS RECEIVED: W.125  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	Ams-QQ-A-200/8
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	Heat # 22894511 Lot # 22894511
CORRECT MATERIAL IDENTIFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>DAS</u>	SIGNED OFF BY: _____		
DATE: <u>9-8 MAR 14 2018</u>	DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



DESIGN <i>[Signature]</i>	DRAWN BY <i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>CP</i>	APPROVED <i>[Signature]</i>	DRAWING NO. M6061T6TS	REV. <i>A</i> SHEET <i>1</i> OF <i>1</i>
DATE 01.09.24		TITLE 6061-T6 SQUARE TUBING	SCALE NTS
A	01.09.24	NEW ISSUE	

PURCHASE MATERIAL :

6061-T6 (OR 6061-T651/T6510/T6511/T62) SQUARE TUBING  
PER AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116) OR  
PER AMS-QQ-A-200/8 (OR AMS 4160)

*W*

PART NUMBER :

M6061T6TS | A.AAA | W | .TTT |  
| WIDTH | WALL |

WHERE A.AAA = WIDTH IN INCHES

.TTT = WALL THICKNESS IN INCHES

EG. 0.75" x 0.75" x 0.062" WALL = M6061T6TS 0.750W.062

RELEASED  
01.09.25 *[Signature]*

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## MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061T6+51.000W.120

PO / BATCH NO.: 039214/5051215

DATE: MAR 14 2018

MATERIAL CERT REC'D: YES  
 QUANTITY RECEIVED: 126'  
 QUANTITY INSPECTED: 126'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: W.120  
 THICKNESS RECEIVED: W.120  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL PER M-DRAWING	(Y) N	<u>AMS-QQ-A-200/8</u>
CORRECT THICKNESS	(Y) N	
PHOTO REQUIRED	Y (N)	
CORRECT REF # TO LINK CERT	(Y) N	<u>Heat # 22894511 Lot # 22894511</u>
CORRECT MATERIAL IDENTIFICATION	(Y) N	
CORRECT M# ON THE MATERIAL	(Y) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> <u>11</u> DATE: <u>9-89 MAR 14 2018</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



DESIGN <i>[Signature]</i>	DRAWN BY <i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>CP</i>	APPROVED <i>[Signature]</i>	DRAWING NO. M6061T6TS	REV. <i>A</i> SHEET <i>1</i> OF <i>1</i>
DATE 01.09.24		TITLE 6061-T6 SQUARE TUBING	SCALE MTS
A	01.09.24	NEW ISSUE	

PURCHASE MATERIAL :

6061-T6 (OR 6061-T651/T6510/T6511/T62) SQUARE TUBING  
PER AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116) OR  
PER AMS-QQ-A-200 (OR AMS 4160)

PART NUMBER:

M6061T6TS | A.AAA | W | .TTT |  
| WIDTH | WALL |

WHERE A.AAA = WIDTH IN INCHES  
.TTT = WALL THICKNESS IN INCHES

EG. 0.75" x 0.75" x 0.062" WALL = M6061T6TS 0.750W.062

RELEASED  
01.09.25 *[Signature]*

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## MATERIAL RECEIPT INSPECTION FORM

MATERIAL: m6061t6to.500w.058  
 DATE: MAR 14 2018

PO / BATCH NO.: 039214/5051214

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 48'  
 QUANTITY INSPECTED: 48'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: W.058  
 THICKNESS RECEIVED: W.058  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL PER M-DRAWING	(Y) N	WU-T-70016
CORRECT THICKNESS	(Y) N	
PHOTO REQUIRED	Y (N)	
CORRECT REF # TO LINK CERT	(Y) N	Heat II P002573770002
CORRECT MATERIAL IDENTIFICATION	(Y) N	
CORRECT M# ON THE MATERIAL	(Y) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> <u>11</u> DATE: <u>9-89 MAR 14 2018</u>	SIGNED OFF BY: _____ DATE: _____

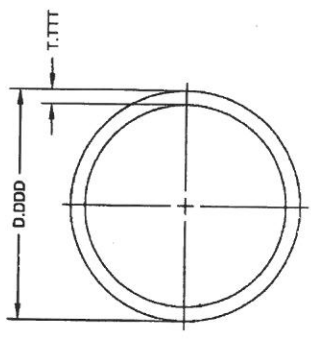
Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

PURCHASE MATERIAL: 8061-T6/T62/T6510/T6511 SEAMLESS TUBING

SPECIFICATION: WV-1-200/8  
OR QQ-A-200/8 OR QQ-A-225/8  
OR AMS 4080 OR AMS 4082 OR AMS 4083  
OR ASTM B210 OR ASTM B241

PART NUMBER: M6061T6T1P.DDD|WT.TTT|  
OD | WALL

WHERE "D.DDD" = OD IN INCHES  
"T.TTT" = WALL THICKNESS  
EG. 3/8" OD X 0.058 WALL = M6061T6T0.375W0.058  
MATERIAL TOLERANCE: PER ANSI H35.2



RELEASED  
2013-07-02

C	COMPLETE REFORMAT, ADDED T6510 & T6511. ADDED AMS 4083, ASTM B210 & ASTM B241 ADDED MATERIAL TOLERANCE	AJS	13.06.12
B	ADD QQ-A-200/8 & QQ-A-225/8	CP	04.01.23
A	NEW ISSUE	DS	01.08.21
REV.	DESCRIPTION	BY	DATE
DESIGN	AJS		
DRAWN	AJS		
CHECKED			
MFG. APPR.	DRAWING NO. M6061T6T		
APPROVED	TITLE 8061-T6 TUBING		
DE APPR.			
DATE	13.06.12		

DART AEROSPACE LTD  
HAWKESBURY, ONTARIO, CANADA  
REV. C  
SHEET 1 OF 1  
SCALE  
NTS

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# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M606176 to 625 W.049  
 DATE: MAR 14 2018

PO / BATCH NO.: 039214/5051213

MATERIAL CERT REC'D: YES  
 QUANTITY RECEIVED: 12  
 QUANTITY INSPECTED: 12  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: W.049  
 THICKNESS RECEIVED: W.049  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT FINISH	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/>	
CORROSION	Y <input type="radio"/> N <input checked="" type="radio"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/>	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/>	<u>WU-T-700/6</u>
CORRECT THICKNESS	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/>	
PHOTO REQUIRED	Y <input type="radio"/> N <input checked="" type="radio"/>	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/>	<u>Heat# 7002504910001</u>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/>	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input type="radio"/> N <input checked="" type="radio"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input type="radio"/> N <input checked="" type="radio"/>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>DAS</u>	SIGNED OFF BY: _____		
DATE: <u>9-89 MAR 14 2018</u>	DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

PURCHASE MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING

SPECIFICATION:

WW-T-700/6  
OR QQ-A-200/8 OR QQ-A-225/8  
OR AMS 4080 OR AMS 4082 OR AMS 4083  
OR ASTM B210 OR ASTM B241

PART NUMBER:

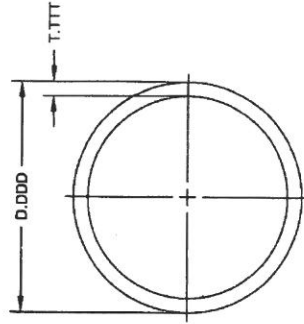
M6061T6T1D.DDD|WT.TTT  
OD | WALL

WHERE "D.DDD" = OD IN INCHES  
"T.TTT" = WALL THICKNESS

EG. 3/8" OD X 0.058 WALL = M6061T6T0.375W0.058

MATERIAL TOLERANCE:

PER ANSI H35.2 /C



RELEASED  
2013-07-02

C	COMPLETE REFORMAT, ADDED T6510 & T6511, ADDED AMS 4083, ASTM B210 & ASTM B241 ADDED MATERIAL TOLERANCE	AJS	13.06.12
B	ADD QQ-A-200/8 & QQ-A-225/8	CP	04.01.23
A	NEW ISSUE	DS	01.06.21
REV.	DESCRIPTION	BY	DATE
DESIGN	AJS		
DRAWN	AJS		
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	13.06.12		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. M6061T6T		REV. C	
TITLE 6061-T6 TUBING		SHEET 1 OF 1	
DATE		SCALE	
13.06.12		NTS	
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# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304tro. 750W.120  
 DATE: MAR 14 2018

PO / BATCH NO.: 039214/5051212

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 12' 20'  
 QUANTITY INSPECTED: 12' 20'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: W.120  
 THICKNESS RECEIVED: W.120  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL PER M-DRAWING	(Y) N	Astm A213
CORRECT THICKNESS	(Y) N	
PHOTO REQUIRED	Y (N)	
CORRECT REF # TO LINK CERT	(Y) N	Heat # YX1709608
CORRECT MATERIAL IDENTIFICATION	(Y) N	
CORRECT M# ON THE MATERIAL	(Y) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS 11</u> DATE: <u>9-89 MAR 14 2018</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING

SPECIFICATION: ASTM A213 OR ASME SA213 OR ASTM A269

WALL THICKNESS TOLERANCE PER ASTM A269 AS FOLLOWS:

OD (IN)	PERMISSIBLE OD TOL (IN)	PERMISSIBLE WALL TOL
UP TO 1/2	+0.005	±15%
1/2 TO 1 1/2 EXCL.	+0.005	±10%
1 1/2 TO 3 1/2 EXCL.	+0.010	±10%
3 1/2 TO 8 1/2 EXCL.	+0.015	±10%
5 1/2 TO 8 EXCL.	+0.030	±10%

PART NUMBER: M304TRD.DDD|W|TTT

WHERE "D.DDD" = OUTSIDE DIAMETER IN INCHES  
AND "TTT" = WALL THICKNESS IN INCHES

EG. 0.375" OD X 0.065" WALL TUBING = M304TRD.375W.065

RELEASED  
08/18/23

B	REFORMAT DWG. ADD SPECS (ZN DB-1), REF PAR 08-020A	CP	08.10.20
A	NEW ISSUE	DS	01.06.08
REV	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	08.10.20		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. M304TR			
TITLE 304/316 ROUND TUBING			
REV. B SHEET 1 OF 1			
SCALE NTS			
DATE 08.10.20			
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# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304TRO.750W.049

PO / BATCH NO.: 039214/5051211

DATE: MAR 14 2018

MATERIAL CERT REC'D: Yes

THICKNESS ORDERED: W.049

QUANTITY RECEIVED: 40'

THICKNESS RECEIVED: W.049

QUANTITY INSPECTED: 40'

SHEET SIZE ORDERED: N/A

QUANTITY REJECTED: 0

SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL PER M-DRAWING	(Y) N	Astm A213
CORRECT THICKNESS	(Y) N	
PHOTO REQUIRED	Y (N)	
CORRECT REF # TO LINK CERT	(Y) N	Heat # N170711A510
CORRECT MATERIAL IDENTIFICATION	(Y) N	
CORRECT M# ON THE MATERIAL	(Y) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

*testers located in the Quality Office*

<b>QC 18 INSPECTION</b>	<b>ENGINEERING SIGNOFF (if required)</b>
INSPECTED BY: <u>DAS</u> <u>11</u> DATE: <u>9-89</u> <b>MAR 14 2018</b>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING

SPECIFICATION: ASTM A213 OR ASME SA213 OR ASTM A269

WALL THICKNESS TOLERANCE PER ASTM A269 AS FOLLOWS:

OD (IN)	PERMISSIBLE OD TOL (IN)	PERMISSIBLE WALL TOL
UP TO 1/2	±0.005	±15%
1/2 TO 1 1/2 EXCL.	±0.005	±10%
1 1/2 TO 3 1/2 EXCL.	±0.010	±10%
3 1/2 TO 5 1/2 EXCL.	±0.015	±10%
5 1/2 TO 8 EXCL.	±0.030	±10%

PART NUMBER:

M304TR0.065W|TTT|

WHERE "D.DDD" = OUTSIDE DIAMETER IN INCHES  
AND "TTT" = WALL THICKNESS IN INCHES

EG. 0.375" OD X 0.065" WALL TUBING = M304TR0.375W 065

RELEASED  
08/10/20

B	REFORMAT DWG. ADD SPECS (ZN DB-1), REF PAR 08-420A	CP	08.10.20
A	NEW ISSUE	DS	01.06.08
REV	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	08.10.20		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. M304TR			
SHEET 1 OF 1			
TITLE 304/316 ROUND TUBING			
SCALE NTS			
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## MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304PO.675W.091  
 DATE: MAR 14 2018

PO / BATCH NO.: 039214/5051210

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 69'  
 QUANTITY INSPECTED: 69'  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: W.091  
 THICKNESS RECEIVED: W.091  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL PER M-DRAWING	(Y) N	Astm A312
CORRECT THICKNESS	(Y) N	
PHOTO REQUIRED	Y (N)	
CORRECT REF # TO LINK CERT	(Y) N	Heat # 11m168
CORRECT MATERIAL IDENTIFICATION	(Y) N	
CORRECT M# ON THE MATERIAL	(Y) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

*testers located in the Quality Office*

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS 11</u> DATE: <u>9-89 MAR 14 2018</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: TP304/TP316 STAINLESS STEEL SEAMLESS PIPE

SPECIFICATION: ASTM A312/ASME SA312

PART NUMBER: M304P/D.DDDW/TTT  
OD | WALL THICKNESS

WHERE "D.DDD" = OUTSIDE DIAMETER IN INCHES PER NPS DESIGNATION (REF TABLE 1)  
AND "TTT" = WALL THICKNESS IN INCHES PER PIPE SCHEDULE (REF TABLE 1)

EG. 3/8 SCHEDULE 40 PIPE = M304P0.675W.091

TABLE 1: DIMENSIONS OF NPS PIPE (REF ANSI B36.10/19)

NPS Designation	Outside Diameter (in)	Pipe Schedule Wall Thickness (in)	
		SCHEDULE 40	SCHEDULE 80
1/8	0.405	0.068	0.095
1/4	0.540	0.088	0.119
3/8	0.675	0.091	0.126
1/2	0.840	0.109	0.147
3/4	1.050	0.113	0.154
1	1.315	0.133	0.179
1-1/4	1.660	0.140	0.191
1-1/2	1.900	0.145	0.200
2	2.375	0.154	0.218
2-1/2	2.875	0.203	0.276
3	3.500	0.216	0.300
3-1/2	4.000	0.226	0.318
4	4.500	0.237	0.337

RELEASED

2017 JUN 19  
ECN 17-598

APPROVED

A	REV.	NEW ISSUE	DESCRIPTION	CP	BY	DATE
DESIGN	DRAWN	CP	DART AEROSPACE LTD	CP		17.02.24
CHECKED		CP	HAWKESBURY, ONTARIO, CANADA	CP		
MFG. APPR.		ML	DRAWING NO.	ML		REV. A
APPROVED		DD	M304P	DD		SHEET 1 OF 1
DE APPR.		WM	TITLE	WM		SCALE
DATE		CP	304/316 PIPE	CP		NTS

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